



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

SM

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/868,938	07/18/2001	Kiyoshi Nishio		4331

7590 12/22/2003  
Felix J D'Ambrosio  
Jones Tullar & Cooper  
PO Box 2266 Eads Station  
Arlington, VA 22202

EXAMINER

TYLER, CHERYL JACKSON

ART UNIT PAPER NUMBER

3746

DATE MAILED: 12/22/2003

16

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/868,938

Applicant(s)

NISHIO ET AL.

Examiner

Cheryl J. Tyler

Art Unit

3746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 7-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 7-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

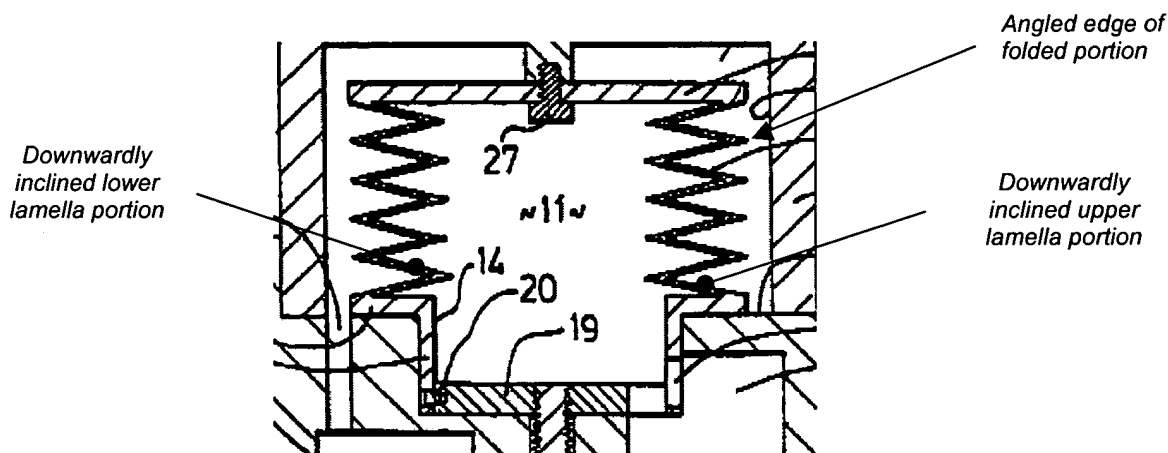
1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

*(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.*

*This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).*

2. Claims 7 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thomin et al. (WO 99/31388) in view of Boedecker et al. (4,655,690). Thomin et al. teach a fluid apparatus having a bellows 12 with extending and contracting portions configured by forming ridge-like folds and valley-like folds 18 in a vertically alternate and continuous manner, that are extendingly and contractingly deformable in an axial direction. The bellows are placed in a pump body 1 such that the axial direction defines a vertical axis. Figure 2 illustrates an inner pumping chamber 11 (corresponding to the claimed liquid chamber) formed inside of bellows 12; an outer pumping chamber 10 (corresponding to the claimed air chamber) formed outside of the bellows 12; and a suction (or inflow, as in claim 4) port 43 and a discharge (or outflow, as in claim 4) port 45 formed in an inner bottom face of the pump body facing the inner pumping chamber. Figure 2 further illustrates that the bellows are formed into a shape in which a lower one

of upper and lower lamella portions of each of the ridge-like folds is downwardly inclined toward the vertical axis, in both the extending and contracting state (see the accompanying figure), and in the contracting state, the upper and lower lamella portion of each ridge-like fold is formed to be downwardly inclined.

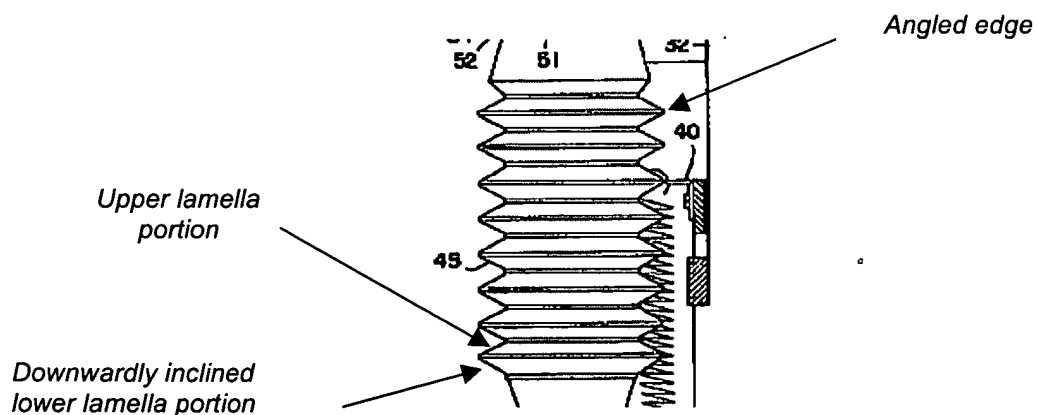


While there are instances of functional language in the claims, a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the structural limitations of the claims, as is the case here, and were not specifically addressed.

While Thomin et al. teach most of the limitations of the claims, they do not explicitly teach that the bellows can be made of polytetrafluoroethylene. Boedecker et al. teach using a "flexible plastic which is resistant to chemicals, preferably polytetrafluoroethylene" (see column 2, lines 28-30). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a plastic bellows made of polytetrafluoroethylene, as taught in the Boedecker et al.

invention, in the Thomin et al. invention in those cases where caustic fluid is to be pumped in a piping in order not to damage the bellows.

3. Claims 7 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hope et al. (4,231,724) in view of Boedecker et al. Hope et al. teach a fluid apparatus having a bellows 45 configured by a pump in which a bellows that has an extending and contracting portion configured by forming ridge-like folds and valley-like folds in a vertically alternate and continuous manner (see column 5, lines 7-13), and that is extendingly and contractingly deformable in an axial direction. The bellows 45 are placed in a main frame 12 (corresponding to the claimed pump body) such that the axial direction extends along a vertical axis, and include a chamber inside of the bellows. Hope et al. further teach a suction port 83 and a discharge port 63 and that the extending and contracting portion of the bellows is formed into a shape in which a lower one of upper and lower lamella portions of each of the ridge-like folds is downward inclined toward the vertical axis, in both the extending and contracting state (see the accompanying figure), and in the contracting state, the upper and lower lamella portion



of each ridge-like fold is formed to be downwardly inclined. With regards to claim 10, since the bellows are exposed to air, it stands to reason that there is an air chamber outside of the bellows. That is, outside of the bellows 4 and within main frame 12, constitutes the claimed air chamber.

While Hope et al. teach most of the limitations of the claims, they do not explicitly teach that the ports are in an inner bottom face of the pump body facing the liquid chamber. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the ports in an inner bottom face of the pump body in order to advantageously reduce the number of elements in the fluid apparatus. By reducing the number of elements, the cost of the apparatus and the manufacturing times may be reduced. Further, it would reduce the overall height and weight of the apparatus by incorporating the ports in the pump body.

While there are instances of functional language in the claims, a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the structural limitations of the claims, as is the case here, and were not specifically addressed.

While Hope et al. teach most of the limitations of the claims, they do not explicitly teach that the bellows can be made of polytetrafluoroethylene. Boedecker et al. teach using a "flexible plastic which is resistant to chemicals, preferably polytetrafluoroethylene" (see column 2, lines 28-30). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a

plastic bellows made of polytetrafluoroethylene, as taught in the Boedecker et al.

invention, in the Hope et al. invention in those cases where caustic fluid is to be pumped in a piping in order not to damage the bellows.

4. Claims 8-9 and 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hope et al. (mentioned previously), as modified by Boedecker et al. (mentioned previously) in view of Eickmann (4,984,970). Hope et al., as modified by Boedecker et al., teach most of the limitations of the claims, except the inclination angle of the lower lamella portion of the bellows. Eickmann teaches the criticality of choosing the correct angle in order to enable the bellowed portions to withstand higher pressures without failing. It would have been obvious to one of ordinary skill in the art at the time the invention was made to arrive at the cited dimensions, without undue experimentation, in order to withstand the maximum amount of pressure. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to arrive at the cited dimensions, as discussed by Eickmann, in the Hope et al., as modified by Boedecker et al., invention in order to advantageously achieve the maximum amount of pressure in the bellows without the bellows failing.

#### ***Response to Arguments***

5. Applicant's arguments filed November 21, 2003 have been fully considered but they are not persuasive. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., that the lower lamella portion is not at a "gentle" angle when the

bellows are extended and that the upper lamella portion of each ridge-like fold is inclined at the same angle and the lower lamella portion) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

While the applicant is genuinely trying to recite the inventive features of his apparatus over the prior art of record, he is encouraged to phone the Examiner to discuss the purported differences and perhaps arrive at claim language that is agreeable to both parties.

#### ***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cheryl J. Tyler whose telephone number is 703-306-2772. The examiner can normally be reached on Monday-Thursday, 6:00 - 10:30 am.

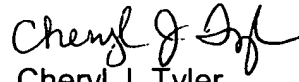
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Justine R. Yu can be reached on 703-308-2675. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9302.



Art Unit: 3746

---

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0861.

  
Cheryl J. Tyler  
Primary Examiner  
Art Unit 3746

CJT  
December 20, 2003